

Release notes for ENDF/B Development n-099_Es_254m1
evaluation



April 26, 2017

- fudge-4.0 Warnings:

1. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.29%

2. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 1: (z,n) (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.98%

3. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 1 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 2 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (9.080989e-09) is too small

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 3 (total): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 3 (total): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 4 (n + Es254_e2): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 4 (n + Es254_e2): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

9. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 8 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission]): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

10. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 8 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission]): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

11. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 10 (n + Es254): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (4.676910e-11) is too small

12. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 11 (n + (Es254_e1 -> Es254 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

13. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 12 (n + (Es254_e3 -> Es254 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (8.940753e-10) is too small

14. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 13 (n + (Es254_e4 -> Es254 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.242547e-09) is too small

15. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 14 (n + (Es254_e5 -> Es254 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.116844e-10) is too small

16. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 15 (n + (Es254_e6 -> Es254 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (6.209739e-10) is too small

17. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 16 (n + (Es254_e7 -> Es254 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (2.882919e-10) is too small

18. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 17 ($n + (Es254_c \rightarrow Es254 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

19. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 18 ($Es255 + \gamma$): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

20. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 18 ($Es255 + \gamma$): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

21. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 19 ($n + Es254_e2$ [angular distribution]): / Form 'eval': (Error # 1): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

22. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 20 ($n[multiplicity: 'energyDependent', emissionMode: 'prompt'] + n[emissionMode: '6 delayed'] + \gamma [total fission] [spectrum]$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

23. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 21 ($n[multiplicity: 'energyDependent', emissionMode: 'prompt'] + n[emissionMode: '6 delayed'] + \gamma [total fission] [spectrum]$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

24. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 22 ($n[multiplicity: 'energyDependent', emissionMode: 'prompt'] + n[emissionMode: '6 delayed'] + \gamma [total fission] [spectrum]$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

25. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 23 ($n[multiplicity: 'energyDependent', emissionMode: 'prompt'] + n[emissionMode: '6 delayed'] + \gamma [total fission] [spectrum]$): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

- fudge-4.0 Errors:

1. Duplicate Eout in outgoing distribution

Reading ENDF file:/n-099_Es_254m1.endf (Error # 0): Bad Eout

```
WARNING: skipping duplicate e_out = 6058630.0, i1 = 69 0 1e-05
```

2. Energy range of data set does not match cross section range

reaction label 8: n + (Es254_c ->Es254 + gamma) / Product: Es254_c / Decay product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (120000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

3. Energy range of data set does not match cross section range

reaction label 8: n + (Es254_c ->Es254 + gamma) / Product: Es254_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (120000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

```
WARNING: Domain doesn't match the cross section domain: (100000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

```
WARNING: Domain doesn't match the cross section domain: (120000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

```
WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

... plus 6 more instances of this message

4. Energy range of data set does not match cross section range

reaction label 8: n + (Es254_c ->Es254 + gamma) / Product: Es254_c / Decay product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (100000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

5. Energy range of data set does not match cross section range

reaction label 8: n + (Es254_c ->Es254 + gamma) / Product: Es254_c / Decay product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (120000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

6. Energy range of data set does not match cross section range

reaction label 8: n + (Es254_c ->Es254 + gamma) / Product: Es254_c / Decay product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

7. Energy range of data set does not match cross section range

reaction label 8: n + (Es254_c ->Es254 + gamma) / Product: Es254_c / Decay product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (131018.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

8. Energy range of data set does not match cross section range

reaction label 8: n + (Es254_c ->Es254 + gamma) / Product: Es254_c / Decay product: gamma_f / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (250000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
```

9. Energy range of data set does not match cross section range
reaction label 8: n + (Es254_c -> Es254 + gamma) / Product: Es254_c / Decay product: gamma_g / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
10. Energy range of data set does not match cross section range
reaction label 8: n + (Es254_c -> Es254 + gamma) / Product: Es254_c / Decay product: gamma_h / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
11. Energy range of data set does not match cross section range
reaction label 8: n + (Es254_c -> Es254 + gamma) / Product: Es254_c / Decay product: gamma_i / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (250000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
12. Energy range of data set does not match cross section range
reaction label 8: n + (Es254_c -> Es254 + gamma) / Product: Es254_c / Decay product: gamma_j / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (250000.0 -> 20000000.0) vs (15119.3 -> 20000000.0)
13. Calculated and tabulated Q values disagree.
reaction label 9: n[multiplicity:'2'] + Es253 + gamma (Error # 0): Q mismatch
- WARNING: Calculated and tabulated Q-values disagree: -5359829.093566895 eV vs -5008830. eV!
14. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)
15. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)
16. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)
17. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)

18. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)
19. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)
20. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)
21. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)
22. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)
23. Energy range of data set does not match cross section range
reaction label 9: n[multiplicity:'2'] + Es253 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (5500000.0 -> 20000000.0) vs (5028710.0 -> 20000000.0)
24. Calculated and tabulated Q values disagree.
reaction label 10: n[multiplicity:'3'] + Es252 + gamma (Error # 0): Q mismatch
- WARNING: Calculated and tabulated Q-values disagree: -11711436.18591309 eV vs -1.13604e7 eV!
25. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)
26. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

27. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

28. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

29. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

30. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

31. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

32. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

33. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

34. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

35. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_f / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

36. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_f / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

37. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_g / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

38. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_g / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

39. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_h / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

40. Energy range of data set does not match cross section range
reaction label 10: n[multiplicity:'3'] + Es252 + gamma / Product: gamma_h / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11405500.0 -> 20000000.0)

41. Calculated and tabulated Q values disagree.
reaction label 11: n[multiplicity:'4'] + Es251 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -17000967.73828125 eV vs -1.665e7 eV!

42. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

43. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

44. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

45. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

46. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

47. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

48. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

49. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

50. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

51. Energy range of data set does not match cross section range
reaction label 11: n[multiplicity:'4'] + Es251 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (17500000.0 -> 20000000.0) vs (16716100.0 -> 20000000.0)

52. Calculated and tabulated Q values disagree.
reaction label 13: Es255 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 5707630.31237793 eV vs 6058630. eV!

53. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 9: n + (Es254_c -> Es254 + gamma) total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 39.70%

54. Multiplicity does not match sum of linked product multiplicities!
 $multiplicitySum$ label 10: $n[multiplicity:'2'] + Es253 + \text{gamma total gamma multiplicity}$
 (Error # 0): *summedMultiplicityMismatch*
- WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 96.52%
55. Multiplicity does not match sum of linked product multiplicities!
 $multiplicitySum$ label 11: $n[multiplicity:'3'] + Es252 + \text{gamma total gamma multiplicity}$
 (Error # 0): *summedMultiplicityMismatch*
- WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 100.00%
56. Multiplicity does not match sum of linked product multiplicities!
 $multiplicitySum$ label 12: $n[multiplicity:'4'] + Es251 + \text{gamma total gamma multiplicity}$
 (Error # 0): *summedMultiplicityMismatch*
- WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 99.99%
57. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 0: $/reactionSuite/fissionComponents/fissionComponent[@label='0']$
 (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 237620778487.973 eV vs 2.199e8 eV!
58. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 1: $/reactionSuite/fissionComponents/fissionComponent[@label='1']$
 (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 237620778487.973 eV vs 2.199e8 eV!
59. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 2: $/reactionSuite/fissionComponents/fissionComponent[@label='2']$
 (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 237620778487.973 eV vs 2.199e8 eV!
60. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 3: $/reactionSuite/fissionComponents/fissionComponent[@label='3']$
 (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 237620778487.973 eV vs 2.199e8 eV!
61. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.
Section 19 (n + Es254_e2 [angular distribution]): / Form 'eval': / LegendreLValue L=1 vs 1 (Error # 0): Bad evs

WARNING: 10 negative eigenvalues! Worst case = -4.909633e-04

- njoy2012 Warnings:

- Evaluation has no resonance parameters given
unresr...calculation of unresolved resonance cross sections (0): No RR

```
---message from unresr---mat 9915 has no resonance parameters
copy as is to nout
```

2. In some evaluations, the partial fission reactions MT=19, 20, 21, and 38 are given in File 3, but no corresponding distributions are given. In these cases, it is assumed that MT=18 should be used for the fission neutron distributions.
heatr...prompt kerma (0): HEATR/hinit (3)

```
---message from hinit---mt19 has no spectrum  
mt18 spectrum will be used.
```

3. In some evaluations, the partial fission reactions MT=19, 20, 21, and 38 are given in File 3, but no corresponding distributions are given. In these cases, it is assumed that MT=18 should be used for the fission neutron distributions.
heatr...prompt kerma (1): HEATR/hinit (3)

```
---message from hinit---mt458 is missing for this mat
```

4. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (2): HEATR/hinit (4)

```
---message from hinit---mf6, mt 16 does not give recoil za= 99253  
one-particle recoil approx. used.
```

5. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (3): HEATR/hinit (4)

```
---message from hinit---mf6, mt 17 does not give recoil za= 99252  
one-particle recoil approx. used.
```

6. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (4): HEATR/hinit (4)

```
---message from hinit---mf6, mt 37 does not give recoil za= 99251  
one-particle recoil approx. used.
```

7. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (5): HEATR/hinit (4)

```
---message from hinit---mf6, mt 51 does not give recoil za= 99254  
one-particle recoil approx. used.
```

8. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (6): HEATR/hinit (4)

```
---message from hinit---mf6, mt 52 does not give recoil za= 99254  
one-particle recoil approx. used.
```

9. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (7): HEATR/hinit (4)

```
---message from hinit---mf6, mt 53 does not give recoil za= 99254  
one-particle recoil approx. used.
```

10. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (8): HEATR/hinit (4)

```
---message from hinit---mf6, mt 54 does not give recoil za= 99254
one-particle recoil approx. used.
```

11. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (9): HEATR/hinit (4)

```
---message from hinit---mf6, mt 55 does not give recoil za= 99254
one-particle recoil approx. used.
```

12. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (10): HEATR/hinit (4)

```
---message from hinit---mf6, mt 56 does not give recoil za= 99254
one-particle recoil approx. used.
```

13. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (11): HEATR/hinit (4)

```
---message from hinit---mf6, mt 57 does not give recoil za= 99254
one-particle recoil approx. used.
```

14. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (12): HEATR/hinit (4)

```
---message from hinit---mf6, mt 91 does not give recoil za= 99254
one-particle recoil approx. used.
```

15. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (13): HEATR/hinit (4)

```
---message from hinit---mf6, mt102 does not give recoil za= 99255
photon momentum recoil used.
```

16. Evaluation has no resonance parameters given
purr...probabalistic unresolved calculation (0): No RR

```
---message from purr---mat 9915 has no resonance parameters
copy as is to nout
```

17. Coefficient mismatch of some sort
covr...process covariance data (1): COVR/matshd (2)

```
---message from matshd---processing of mat/mt 9915/ 4 vs. mat1/mt1 9915/ 52
largest coefficient= 1.13774E+00 at index 435 281
```

18. The number of coefficients is too big.
covr...process covariance data (2): COVR/matshd (3)

```
---message from matshd--- 2 coefficients > 1
reset and continue.
```

19. Coefficient mismatch of some sort
covr...process covariance data (3): COVR/matshd (2)

```
---message from matshd---processing of mat/mt 9915/ 4 vs. mat1/mt1 9915/ 91
largest coefficient= 5.30314E+01 at index 418 302
```

20. The number of coefficients was too large in a covariance
covr...process covariance data (4): Cov:Too many coeff.

```
---message from matshd--- 416 coefficients > 1
                           reset and continue.
```

21. The number of coefficients was too large in a covariance
covr...process covariance data (5): Cov:Too many coeff.

```
---message from matshd--- 763 coefficients > 2
                           reset and continue
```

- **xsectplotter** Errors:

1. Duplicate Eout in outgoing distribution
(Error # 2): Bad Eout

```
WARNING: skipping duplicate e_out = 6058630.0, i1 = 69 0 1e-05
```